

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10898 (1984): Fortified Wheat Atta [FAD 16: Foodgrains, Starches and Ready to Eat Foods]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS : 10898 - 1984

(Reaffirmed - 2012)

Indian Standard

SPECIFICATION FOR FORTIFIED WHEAT *ATTA*

UDC 664.641.12



© Copyright 1984

**INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002**

Indian Standard

SPECIFICATION FOR FORTIFIED WHEAT ATTA

Nutrition Sectional Committee, AFDC 37

Chairman

DR K. T. ACHAYA

Representing

United Nations University, Central Food
Technological Research Institute (CSIR),
Mysore

Members

DR A. S. AIYAR	Protein Foods and Nutrition Development Association of India, Bombay
DR B. P. BALIGA	Tata Oil Mills Company Ltd, Bombay
SHRI M. C. BADAMI (<i>Alternate</i>)	
DR M. G. DEO	Indian National Science Academy, New Delhi
DR BALDEV SINGH (<i>Alternate</i>)	
DR A. D. DEODHAR	National Dairy Research Institute (ICAR), Karnal
DR B. N. MATHUR (<i>Alternate</i>)	
DR (SMT) RAJAMMAL P. DEVADAS	Home Science Association of India, Coimbatore
DR SYED RIAZ AHMED (<i>Alternate</i>)	
SHRI JASBIR SINGH	Food Corporation of India, New Delhi
SHRI T. RAMASIVAN (<i>Alternate</i>)	
SHRI K. S. KANNAN	The Britannia Industries Ltd, Bombay
DR R. JAYARAM (<i>Alternate</i>)	
SHRI H. H. LILLANEY	Solvent Extractors' Association of India, Bombay
SHRI R. K. SETH (<i>Alternate</i>)	
DR V. B. MITBANDER	Modern Food Industries (India) Ltd, New Delhi
DR M. M. KRISHNA (<i>Alternate</i>)	
AVM S. K. MUKHERJEE	Directorate General of Armed Forces Medical Service, New Delhi
COL P. S. GILL (<i>Alternate</i>)	
DR M. S. NAIK	Indian Agricultural Research Institute (ICAR), New Delhi
DR B. M. LAL (<i>Alternate</i>)	
DR S. S. PATHAK	Food & Nutrition Board, Ministry of Food and Civil Supplies, New Delhi
SHRI G. D. SHARMA (<i>Alternate</i>)	
DR N. S. RAJAGOPAL	Directorate of Vegetable Oils & Fats, Ministry of Food and Civil Supplies, New Delhi
DR M. K. KUNDU (<i>Alternate</i>)	

(Continued on page 2)

© Copyright 1984

INDIAN STANDARDS INSTITUTION

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
DR M. V. RAMA RAO	Defence Food Research Laboratory, Mysore
DR K. SANTHANAM (<i>Alternate</i>)	
SHRI S. RAMASWAMY	Directorate General of Technical Development, New Delhi
ASSISTANT DEVELOPMENT OFFICER (<i>Alternate</i>)	
DR B. S. NARASINGA RAO	National Institute of Nutrition (ICMR), New Delhi
DR S. VENKAT RAO	Central Food Technological Research Institute (CSIR), Mysore
DR P. B. RAMA RAO (<i>Alternate</i>)	
SHRI M. G. SATHE	Sathe Biscuits and Chocolate Company Limited, Pune
SHRI S. V. PHADKE (<i>Alternate</i>)	
DR P. C. SEN	Directorate General of Health Services, New Delhi
SHRI D. S. CHADHA (<i>Alternate</i>)	
SHRI V. H. SHAH	Kaira District Co-operative Milk Producers' Union Limited, Anand
SHRI KAILASH VYAS (<i>Alternate</i>)	
DR K. SRINIVASAN	Hindustan Lever Ltd, Bombay
DR G. A. SULEBELE	Bangalore Dairy Milstone Project, Bangalore
SHRI B. K. RAMAIAH (<i>Alternate</i>)	
DR M. S. SWAMINATHAN	Indian Council of Agricultural Research, New Delhi
DR V. NAGARAJAN (<i>Alternate</i>)	
KUMARI M. S. USHA	G. B. Pant University of Agriculture and Techno- logy, Pantnagar
SHRI VINEET VIRMANI	Roller Flour Millers' Federation of India, New Delhi
SHRI SANTANU CHAUDHURI (<i>Alternate</i>)	
SHRI T. PURNANANDAM, Director (Agri & Food)	Director General, ISI (<i>Ex-officio Member</i>)

Secretary

SHRI S. K. SUD
Senior Deputy Director (Agri & Food), ISI

Protein Rich Foods Subcommittee, AFDC 37 : 2

Convener

DR M. S. NARASINGA RAO Central Food Technological Research Institute
(CSIR), Mysore

Members

SHRI M. KANTHARAJ URS (*Alternate to*
DR M. S. Narasinga Rao)

DR K.T. ACHAYA United Nations University, Central Food Techno-
logical Research Institute (CSIR), Mysore

SHRI S. N. AGARWAL Prag Ice and Oils Mills, Aligarh

(Continued on page 8)

Indian Standard

SPECIFICATION FOR FORTIFIED WHEAT ATTA

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 28 May 1984, after the draft finalized by the Nutrition Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Wheat *atta* is prepared in India by grinding whole wheat either in small stone mills operated by animals or human labour, in larger mills using mechanical power or in large roller flour mills.

0.3 In an effort at nutritional upgrading, fortified wheat *atta* to which vitamins and minerals have been added is at present being prepared and marketed in the country. This standard is expected to help in exercising proper quality control in the manufacture of fortified wheat *atta* of good quality under hygienic conditions.

0.4 An Indian Standard for wheat *atta* (IS : 1155-1968*) has already been published. Separate standards on fortified and *paushtik* wheat *maida* and barley powder, and on *paushtik* wheat *atta* are also being brought out simultaneously.

NOTE — The *Paushtik* variety contains higher percentage of proteins compared to the fortified variety, the percentages of other contents, such as iron, calcium, and vitamins remaining the same.

0.5 While formulating this standard, due consideration has been given to the relevant Rules prescribed by the Government of India, under the *Prevention of Food Adulteration Act, 1954* and the *Standards of Weights and Measures (Packaged Commodities) Rules, 1977*. This standard is, however, subject to the restrictions imposed under these Acts, wherever applicable.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Specification for wheat *atta* (second revision).

†Rules for rounding off numerical values (revised).

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for fortified wheat *atta*, hereafter termed FW *atta*.

2. REQUIREMENTS

2.1 The FW *atta* shall be prepared by thoroughly and uniformly blending suitable proportions of calcium carbonate, iron, thiamine, riboflavin and niacin with wheat *atta* of good quality (*see* IS : 1155-1968*). It shall be in the form of powder having a characteristic taste and flavour. The product shall be free from rancidity and insect, rodent or fungus infestation. It shall also be free from fermented, musty or other objectionable odour. It shall neither have any ingredients other than those specified nor any extraneous matter.

NOTE — The appearance, taste and odour shall be determined by sensory evaluation tests.

2.2 The calcium carbonate used for blending FW *atta* shall be prepared chalk (popularly known as *creta preparata*) or dicalcium phosphate or tricalcium phosphate. The iron or iron salts should be such as to ensure high bio-availability of iron. The vitamins and the minerals shall be of pharmaceutical or food grade.

2.3 Hygienic Conditions — The FW *atta* shall be manufactured, packed, stored and distributed under hygienic conditions (*see* IS : 2491-1972†) in licensed premises.

2.4 The product shall also conform to the requirements given in Table 1.

3. PACKING AND MARKING

3.1 Packing — The packages may preferably be of 100 g, 200 g, 500 g, 1 kg, 2 kg, 5 kg, and thereafter, in multiples of 5 kg, as desired by the purchaser.

3.1.1 For packages above 65 kg, unless otherwise agreed between the purchaser and the supplier, the material for packing shall be single sound A-twill or B-twill jute bags or DW-flour bags conforming to IS : 1943-1964*, IS : 2566-1965† and IS : 3984-1967‡, respectively.

*Specification for wheat *atta* (*second revision*).

†Code for hygienic conditions for food processing unit (*first revision*).

TABLE 1 REQUIREMENTS FOR FORTIFIED WHEAT ATTA
(Clause 2.4)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST REF TO INDIAN STANDARD
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, <i>Max</i>	13.0	Appendix A of IS : 1155-1968*
ii)	Total ash (on dry basis), percent by mass, <i>Max</i>	2.75 (see Note 1)	Appendix B of IS : 1155-1968*
iii)	Acid insoluble ash (on dry basis), percent by mass, <i>Max</i>	0.20 (see Note 1)	Appendix C of IS : 1155-1968*
iv)	Gluten (on dry basis), percent by mass, <i>Min</i>	7.0	Appendix D of IS : 1155-1968*
v)	Total protein ($N \times 6.25$) (on dry basis), percent by mass, <i>Min</i>	10.0	IS : 7219-1973†
vi)	Crude fibre (on dry basis), percent by mass, <i>Max</i>	2.5	Appendix E of IS : 1155-1968*
vii)	Alcoholic acidity (as H_2SO_4), with 90 percent alcohol, percent by mass, <i>Max</i>	0.12	Appendix F of IS : 1155-1968*
viii)	Calcium, mg/100 g, <i>Min</i>	120 (see Notes 1 and 2)	Appendix F of IS : 1656-1969‡
ix)	Iron, mg/100 g, <i>Min</i>	5	
x)	Thiamine (as hydrochloride), mg/100 g, <i>Min</i>	0.25	IS : 5398-1969§
xi)	Riboflavin, mg/100 mg, <i>Min</i>	0.5	IS : 5399-1969
xii)	Niacin, mg/100 g, <i>Min</i>	2.5	IS : 5400-1969¶

NOTE 1 — These values have been referred to the Central Committee for Food Standards for consideration. Till such time as these values are accepted by the Government of India, the granting of ISI Certification Mark shall be based on the existing requirements given under the provisions of the *Prevention of Food Adulteration Rules, 1955* (see 0.5).

NOTE 2—This is equivalent to 300 mg calcium carbonate.

*Specification for wheat *atta* (*second revision*).

†Method for determination of protein in foods and feeds.

‡Specification for processed cereal weaning foods (*first revision*).

§Methods for estimation of thiamine (vitamin B_1) in foodstuffs.

||Methods for estimation of riboflavin (vitamin B_2) in foodstuffs.

¶Methods for estimation of nicotinic acid (niacin) in foodstuffs.

3.1.2 The bags used for smaller packs may be polyethylene bags or polyethylene lined jute bags or any other suitable material as agreed to between the purchaser and the supplier.

3.1.3 The mouth of the bags shall be either machine stitched or hand stitched. If it is hand stitched, the mouth shall be rolled over and then stitched. The stitches shall be in two cross-rows with at least 14 stitches in each row for jute bags of 65 kg and above.

3.2 Marking — Each bag shall be suitably marked so as to give the following information:

- a) Name of the material;
- b) Name and address of the manufacturer;
- c) Batch or code number;
- d) Net mass; and
- e) Any other details required under the *Standards of Weights and Measures (Packaged Commodities) Rules, 1977*; and *Prevention of Food Adulteration Act, 1954 and Rules, 1955*.

3.2.1 All marking shall be applied on the bags in such a manner that the dye or ink does not penetrate into the material.

3.2.2 Each container may also be marked with the ISI Certification Mark :

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 The method of drawing representatives samples of the material and the criteria for conformity shall be as prescribed in IS : 5315-1978§.

*Specification for A-twill jute bags (revised).

†Specification for B-twill jute bags (revised).

‡Specification for DW-flour bags.

§Methods of sampling for milled cereals and pulses products (first revision)

5. TESTS

5.1 Tests shall be carried out as prescribed under **2.1** and in the appropriate Indian Standards specified in col 4 of Table 1.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals shall be employed in tests and distilled water (*see* IS : 1070-1977*) shall be used where the use of water as a reagent is intended.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

*Specification for water for general laboratory use (*second revision*).

(Continued from page 2)

<i>Members</i>	<i>Representing</i>
DR A. S. AIYAR	Protein Foods and Nutrition Development Association of India, Bombay
SHRI M. C. BADAMI	Tata Oil Mills Company Ltd, Bombay
DR G. S. SABNIS (Alternate)	
SHRI D. S. CHADHA	Central Committee for Food Standards, New Delhi
SMT DEBI MUKHERJEE (Alternate)	
SHRI J. M. DATTA	The Britannia Industries Ltd, Bombay
SHRI V. KRISHNAMOORTHY	Regional Research Laboratory (CSIR), Hyderabad
DR G. LAKSHMINARAYANA (Alternate)	
SHRI LALJEET SINGH	Modern Food Industries (India) Ltd, New Delhi
DR V. B. MITBANDER (Alternate)	
SHRI B. K. NANDI	Technical Standardization Committee (Food- stuffs), New Delhi
SHRI HARPAL SINGH (Alternate)	
DR B. S. NARASINGA RAO	National Institute of Nutrition, Hyderabad
DR N. S. RAJAGOPAL	Directorate of Vegetable Oils & Fats, Ministry of Food and Civil Supplies, New Delhi
DR M. K. KUNDU (Alternate)	
SHRI S. RAMASWAMY	Directorate General of Technical Development, New Delhi
SHRI K. NARAYANA RAO	Food Corporation of India, New Delhi
SHRI F. C. SHIVANNA (Alternate)	
DR U. Y. REGE	Raptakos Brett & Co Ltd, Bombay
SHRI V. H. SHAH	Kaira District Co-operative Milk Producers Union Ltd, Anand
SHRI DINESH SHAHRA	General Foods Private Ltd, Indore
SHRI SANTOSH SHAHRA (Alternate)	
DR G. D. SHARMA	Food and Nutrition Board, Department of Food, Ministry of Food and Civil Supplies, New Delhi
SHRI K. S. KRISHNAMURTHY (Alternate)	
DR G. A. SULEBELE	Bangalore Dairy Miltone Project, Bangalore
SHRI B. K. RAMAIAH (Alternate)	